

## A Public Health Pest Returns with a Vengeance

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# BED BUGS



*Bed bugs, Cimex lectularis, are blood-feeding insects that feed on humans, usually while we are asleep.*

Once a common part of life, bed bugs were eliminated from much of the developed world when pesticide use became

common following World War II. In the past five years, however, bed bugs have once again become a common pest in the United States and throughout the world. The resurgence can be attributed to the ease of international travel, the second-hand furniture trade and the development of insecticide resistance in bed bug populations.

### BED BUG PROTECTION TECHNIQUES

## Tips for Home Health Care and Social Workers

Protect yourself and your clients by always wearing booties and protective coveralls when making home visits. Use a bed bug containment kit made up of the following items:

- ✓ A portable, hard surface chair or stool
- ✓ A fanny pack for holding personal items (identification card, cell phone, additional booties or gloves, etc.)
- ✓ A change of clothes and shoes (kept in your vehicle)
- ✓ A plastic storage container with a sealed lid that is large enough to hold the following items:
  - ♦ Protective booties and Tyvek type coveralls
  - ♦ Disposable gloves
  - ♦ A roll of duct tape (light colored)
  - ♦ Small plastic garbage bags
  - ♦ A roll of clear plastic 50-gallon garbage bags
  - ♦ Flashlight
  - ♦ Narrow banded spatula (for crushing bed bugs)
  - ♦ A fresh container of wet wipes
  - ♦ Plastic box-type clipboard containing paper and pens
- ✓ A second large plastic storage container with a sealed lid that can be used to hold items that might be infected

Adult bed bugs are about 1/4 of an inch long, have flat, rusty-red, oval bodies, and look like an apple seed. They feed for 3–10 minutes, and their bodies swell and become bright red. Once they complete feeding, they crawl to a sheltered seam or crevice, where they will remain for several days digesting the meal. The life cycle takes four to five weeks (egg to egg) to complete under ideal conditions and there can be three or more generations in a year. Adult bed bugs can survive for several months without feeding. Females can lay 200–400 eggs during their lifetime, depending on food supply and temperature.

Bed bugs are attracted to people by their warmth and the carbon dioxide emitted from breathing. The bugs' flattened shape allows them to hide during the day in cracks and crevices, and along mattress and pillow seams. Headboards provide many hiding places. Bed bugs don't fly, but can quickly walk across floors, walls and other surfaces.

## Diagnosis and Treatment

A bed bug infestation can be recognized by brownish or reddish spots from crushed bugs or their fecal spots on sheets, mattresses, bed clothes and

walls. Fecal spots, eggshells and shed skins may be found in the vicinity of their hiding places. A sweet, musty odor may be detected when bed bug infestations are severe.

Bed bug bites are usually the first sign of an infestation and often occur in rows of three or more bites on exposed skin. Welts caused by bed bug bites do not have the red spot in the center that is characteristic of flea bites.

Bed bugs have never been shown to transmit disease pathogens. A variety of clinical reactions are attributed to their bites, including cutaneous and, rarely, systemic reactions. Reactions to bed bug bites may take a week or longer before appearing. The most common reaction to bed bug bites is the development of small inflamed, pruritic bumps where each bite occurs. These usually resolve within a week or two, but can persist for a longer time. Allergic reactions can result in urticaria at the bite site, which can evolve into a more widespread bulbous rash over the subsequent days and may become complicated by secondary bacterial infections.

Treatment for bed bug bites is usually confined to symptomatic relief for pruritic bites using over-the-counter

topical antihistamines or topical corticosteroids. Topical, oral or intravenous antibiotics may be required when secondary bacterial infections occur. Intramuscular injections of antihistamine, corticosteroids or epinephrine may be required for some individuals who develop a systemic allergic reaction to the bites.

## Controlling the Problem

Bed bugs are very difficult to control because their small size and flattened shape allows them to travel in our belongings (clothing, luggage, furniture, electronics, etc.) without our knowledge. Once established in a residence or unit in a building, bed bugs can travel between rooms or apartments on their own or on people's clothing or other belongings. Items purchased at garage sales and thrift shops, especially mattresses, box springs, and bedding, should be carefully inspected for bed bugs before they are taken home.

Home health care workers should take precautions when working in clients' homes, and travelers should carefully inspect their hotel rooms before



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## When Making Home Visits...

- ✓ Always wear simple clothing. Avoid shirts with buttons and pockets, cargo pants or pants with cuffs. Professional looking, long-sleeved, light-colored T-shirts work well. Wear simple shoes that can be thrown in a hot dryer and that have minimal tread. Do not accessorize with anything, particularly scarves, jewelry or handbags.
- ✓ Keep your belongings sealed in containers inside your vehicle.
- ✓ Minimize the number and type of items you bring into a home.
- ✓ If you bring items in, keep them sealed in a garbage bag or plastic bin when not in use.
- ✓ As much as possible, avoid contact with beds, couches and chairs. If you're required to sit, use your portable chair or stool to sit on.
- ✓ If you bring items in, do not place them on beds, couches or chairs.
- ✓ If your client needs to be transported, use the garbage bags in your kit to bag your client's clothes and personal items. Tie the bags closed and seal them in the plastic storage container prior to putting them in your vehicle.
- ✓ If bite marks you suspect were caused by bed bugs develop after you leave, notify the client.

unpacking their luggage (see sidebar for tips on avoiding bed bugs while traveling).

## Getting Rid of Bed Bugs

1. Proper identification of bed bugs in the home
2. Education
3. Thorough inspection of infested and adjacent areas
4. Implementation of both chemical and non-chemical control measures
5. Follow-up to evaluate the success of the treatment

The Health Systems Quality Assurance Division (HSQA) of the Washington State Department of Health is responsible for licensing, inspecting and responding to complaints about transient accommodations (any facility offering three or more units for rent for 30 days or less). In 2009, HSQA received 23 bed-bug related complaints related to transient accommodations. Three of the complaints (13 percent) were substantiated. In 2010, 39 bed bug-related complaints were received; 12 (almost 31 percent) were substantiated. The HSQA attributes the increase in filed complaints to the higher media attention and greater public awareness about the problem. They expect this trend to continue in the next few years. ■

Additional information on bed bugs can be found at [www.doh.wa.gov/ehp/ts/zoo/bedbugs.htm](http://www.doh.wa.gov/ehp/ts/zoo/bedbugs.htm).

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## Tips for Travelers

- ✓ Upon entering your hotel room, immediately place your luggage and other items in the bathroom.
- ✓ Thoroughly inspect the entire hotel room before unpacking.
- ✓ Carefully inspect the bed linens and mattress for the presence of bed bugs. Pull back bed sheets and inspect mattress seams, particularly the corners, for brownish or reddish spots. Bed bugs can also be found in box springs and behind headboards, baseboards, electrical switch plates, picture frames, wallpaper, and in upholstery and furniture.
- ✓ Never put your luggage on the bed. Luggage can be placed on racks, the ironing board or even in the bathtub to help keep bed bugs from accessing them. Do not store clothing in dressers unless the clothing is sealed in plastic bags or containers.
- ✓ If changing rooms within the same hotel because of a bed bug problem, ensure the new room is not adjacent to the possibly infested room.
- ✓ Pack a couple of large garbage bags and bag all of your clothes (whether worn or not) prior to leaving the hotel. Separate the laundry as you would if you were normally laundering items. Separating the clothing permits easy loading of the washing machine.
- ✓ Upon returning home, all clothing should go directly to the laundry room and be washed or run through the dryer on the hot setting for at least 20 minutes before being put away.
- ✓ Inspect and vacuum suitcases before bringing them into the house.
- ✓ If you suspect an infestation in your own home, contact a licensed pest management professional with experience treating bed bugs to inspect the property.

***If bite marks you suspect were caused by bed bugs develop after you leave, notify the hotel manager.***